SEA VIKING 04- Collaborative Planning Workshop

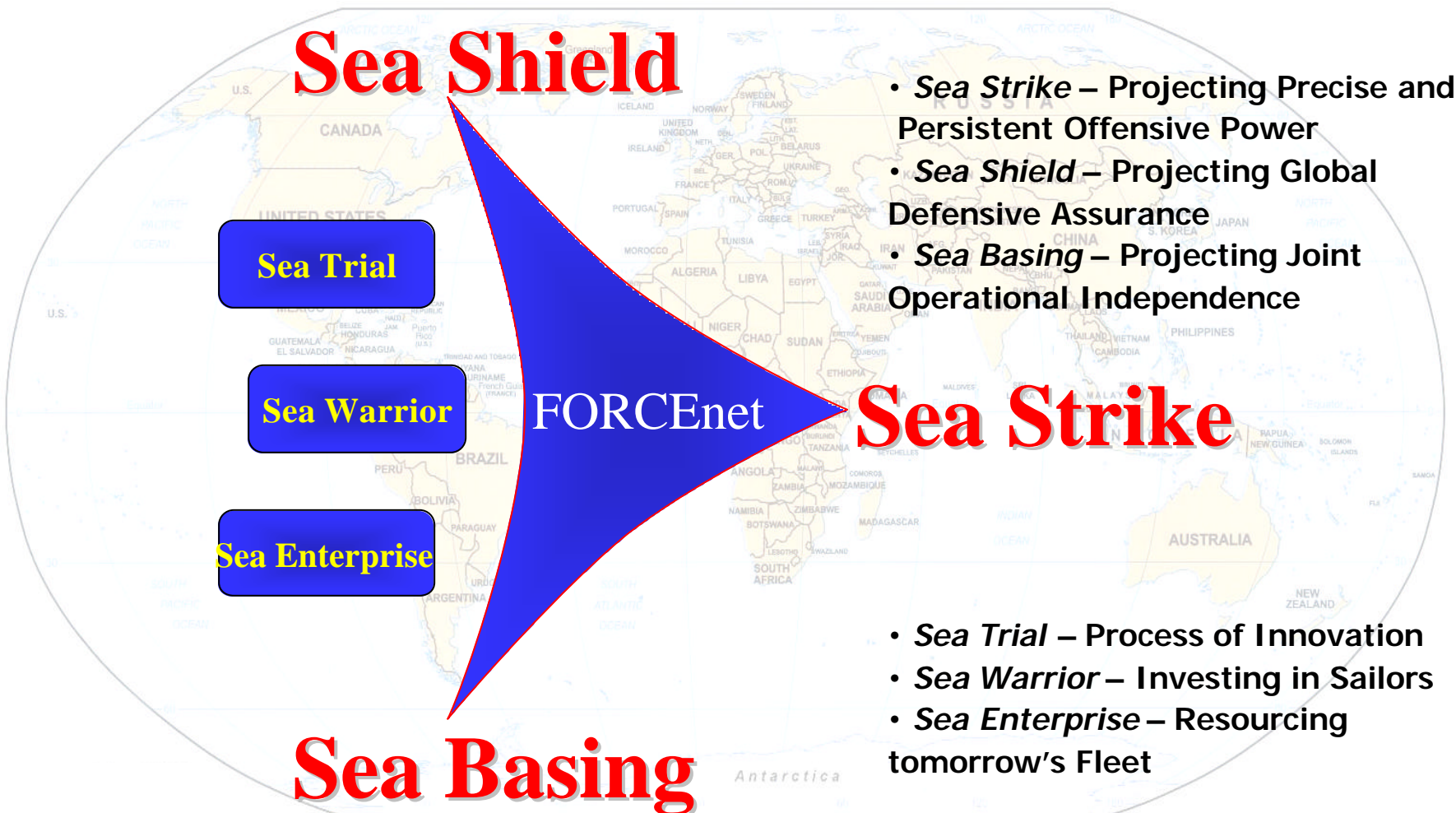**LT Adam Lyons**

22 April 2003

NWDC Mission

Focus and champion Navy warfare innovation and concept development in a joint environment; to plan, coordinate and implement the Fleet's Sea Trial experimentation process; and to synchronize, approve, and disseminate doctrine.

Sea Power -21

Sea Shield

Sea Trial

Sea Warrior

FORCEnet

Sea Enterprise

Sea Strike

Sea Basing

- *Sea Strike* – Projecting Precise and Persistent Offensive Power
- *Sea Shield* – Projecting Global Defensive Assurance
- *Sea Basing* – Projecting Joint Operational Independence

- *Sea Trial* – Process of Innovation
- *Sea Warrior* – Investing in Sailors
- *Sea Enterprise* – Resourcing tomorrow's Fleet

Implemented by a Global Concept of Operations

Sea Trial

*Innovation to the warfighter…
rapid prototyping, concept development, coordinated experimentation*

Sea Trial integrates concepts and technologies, leading to major increases in warfighting effectiveness and a commitment to innovation.

It starts with unbounded concept development, defining an ideal future capability. It then surveys maturing technologies to develop those that fulfill the vision. Together, fused concepts and technologies focus developmental investment.

Sea Trial coordinates naval and joint experiments and wargames to identify breakthrough synergies leading to prototypes that are tested in Fleet and Joint exercises.

Promising assets and ideas are then integrated into spearhead elements of the operational force. Once proven effective, the concepts and technologies are disseminated to the Fleet.

Sea Trial

NWDC Sea Trial Functions

Sea Trial

- Project Coordinator
- Doctrine Development
- Campaign Plan
- NWDC EXPERIMENTATION
- Analysis, Assessment and DOTMLPF Recommendations
- Joint Concept Development and Experimentation

Modeling & Simulation Support
Analysis & Assessment

Building FORCEnet Capability

Expeditionary, multi-tiered sensor and weapon information

Dynamic, multi-path and survivable networks

Adaptive / automated decision aids

FORCEnet

Weapon Direction & Control

Human-centric Integration

Distributed, collaborative command & control
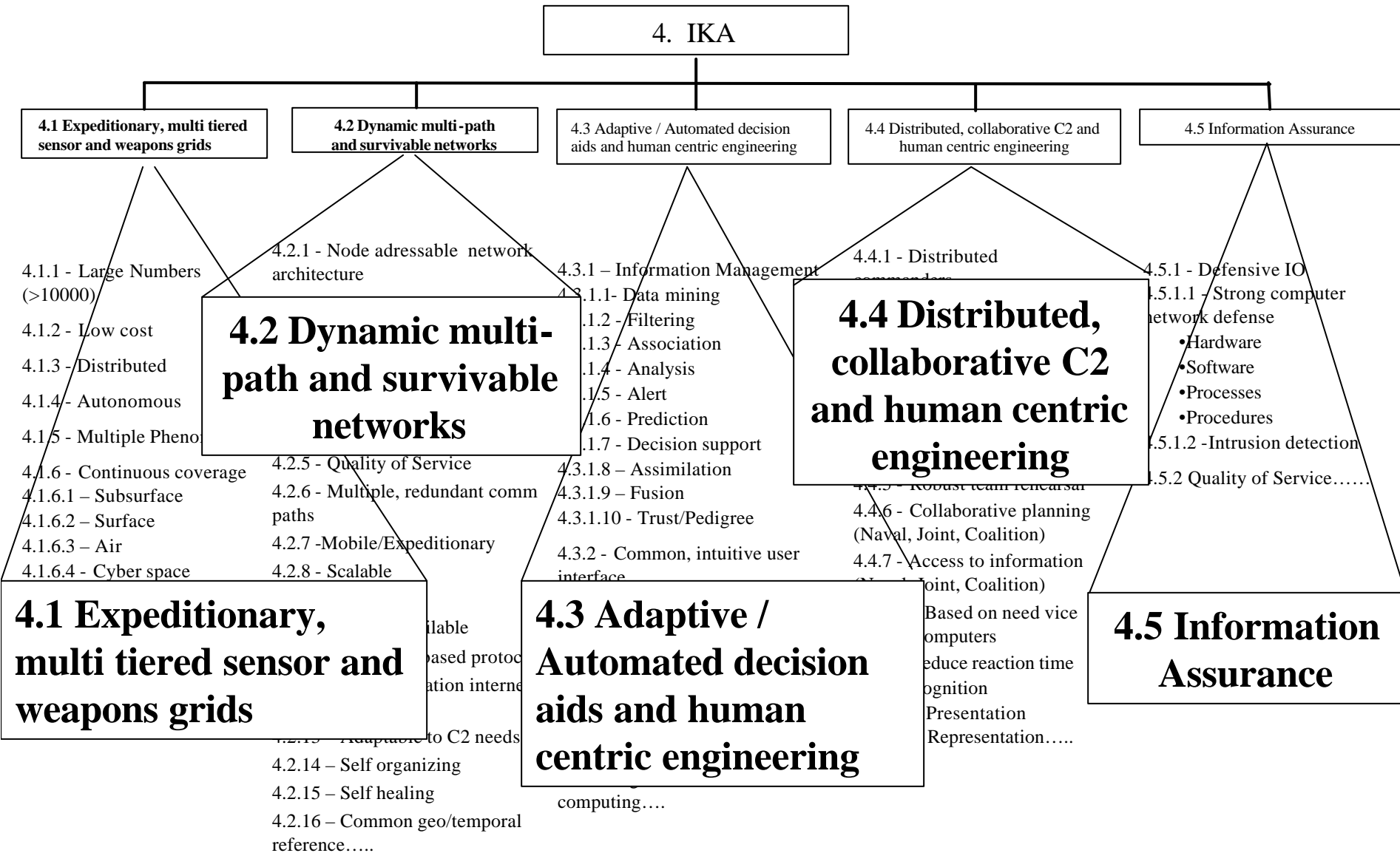
"FORCEnet is the operational concept and architectural framework where we're going to bring together our people, our networks, our combat systems, our ships, our weapons, in a distributed way to support Seapower 21 from seabed to space, from sea to land."
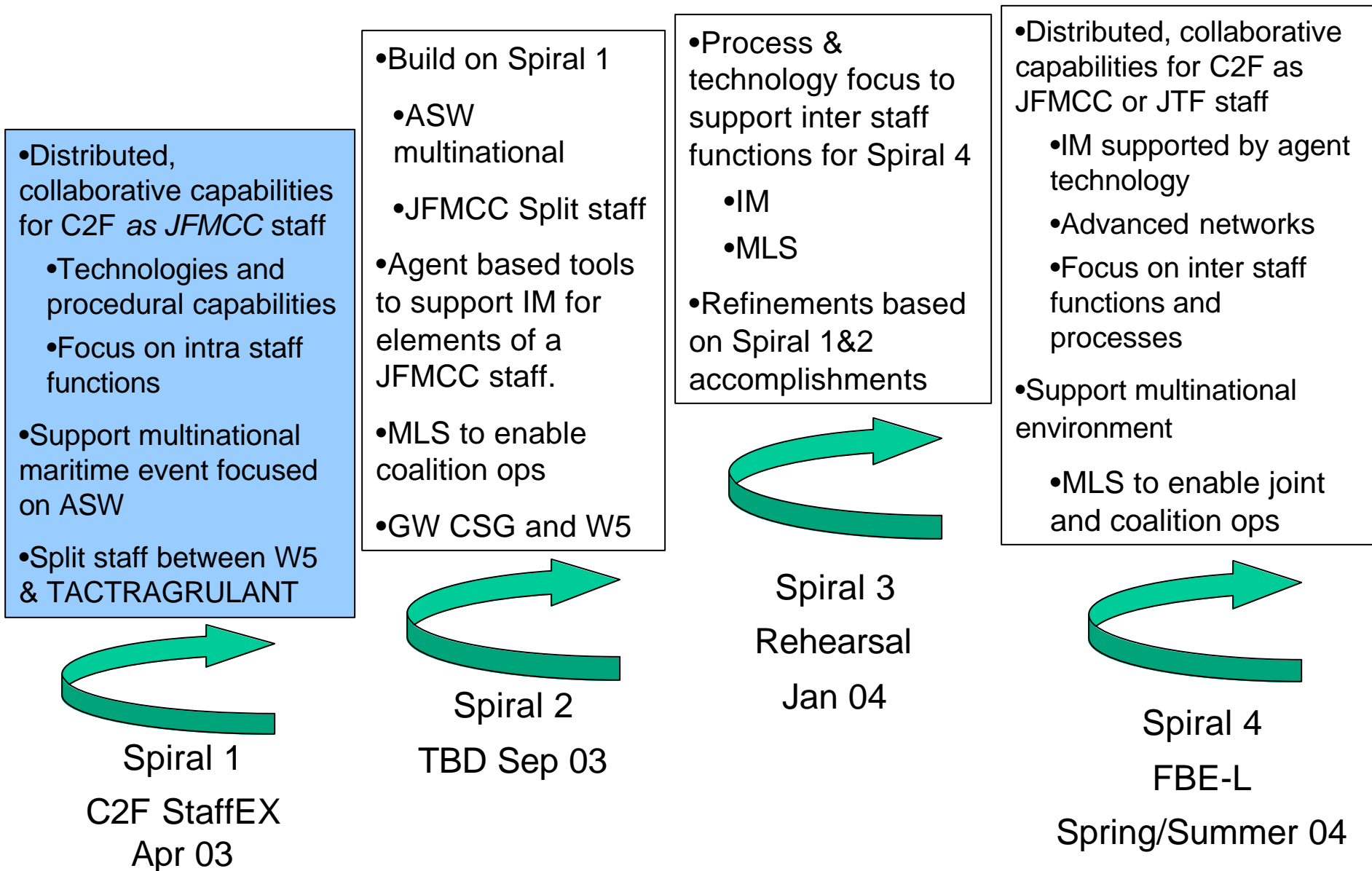
Concept Based - IKA

4. IKA

4.1 Expeditionary, multi tiered sensor and weapons grids

4.2 Dynamic multi-path and survivable networks

4.3 Adaptive / Automated decision aids and human centric engineering

4.4 Distributed, collaborative C2 and human centric engineering

4.5 Information Assurance

4.1.1 - Large Numbers (>10000)
4.1.2 - Low cost
4.1.3 - Distributed
4.1.4 - Autonomous
4.1.5 - Multiple Pheno
4.1.6 - Continuous coverage
4.1.6.1 – Subsurface
4.1.6.2 – Surface
4.1.6.3 – Air
4.1.6.4 - Cyber space

4.2.1 - Node adressable network architecture
4.2.5 - Quality of Service
4.2.6 - Multiple, redundant comm paths
4.2.7 -Mobile/Expeditionary
4.2.8 - Scalable
... ilable
... based protoc
... ation intern
4.2.13 – Adaptable to C2 needs
4.2.14 – Self organizing
4.2.15 – Self healing
4.2.16 – Common geo/temporal reference…..

4.3.1 – Information Management
4.3.1.1- Data mining
4.3.1.2 - Filtering
4.3.1.3 - Association
4.3.1.4 - Analysis
4.3.1.5 - Alert
4.3.1.6 - Prediction
4.3.1.7 - Decision support
4.3.1.8 – Assimilation
4.3.1.9 – Fusion
4.3.1.10 - Trust/Pedigree
4.3.2 - Common, intuitive user interface
... computing….

4.4.1 - Distributed commanders
4.4.5 - Robust team rehearsal
4.4.6 - Collaborative planning (Naval, Joint, Coalition)
4.4.7 - Access to information (Naval, Joint, Coalition)
... Based on need vice computers
... educe reaction time
... ognition
... Presentation
... Representation…..

4.5.1 - Defensive IO
4.5.1.1 - Strong computer network defense
•Hardware
•Software
•Processes
•Procedures
4.5.1.2 -Intrusion detection
4.5.2 Quality of Service……

4.2 Dynamic multi-path and survivable networks

4.4 Distributed, collaborative C2 and human centric engineering

4.1 Expeditionary, multi tiered sensor and weapons grids

4.3 Adaptive / Automated decision aids and human centric engineering

4.5 Information Assurance

FORCEnet Sea Trial Continuum

• Distributed, collaborative capabilities for C2F *as JFMCC* staff
  • Technologies and procedural capabilities
  • Focus on intra staff functions

• Support multinational maritime event focused on ASW

• Split staff between W5 & TACTRAGRULANT

Spiral 1

C2F StaffEX

Apr 03

• Build on Spiral 1
  • ASW multinational
  • JFMCC Split staff

• Agent based tools to support IM for elements of a JFMCC staff.

• MLS to enable coalition ops

• GW CSG and W5

Spiral 2

TBD Sep 03

• Process & technology focus to support inter staff functions for Spiral 4
  • IM
  • MLS

• Refinements based on Spiral 1&2 accomplishments

Spiral 3

Rehearsal

Jan 04

• Distributed, collaborative capabilities for C2F as JFMCC or JTF staff
  • IM supported by agent technology
  • Advanced networks
  • Focus on inter staff functions and processes

• Support multinational environment
  • MLS to enable joint and coalition ops

Spiral 4

FBE-L

Spring/Summer 04

SPIRAL ONE Objective

To test the hypothesis that an advanced *communications network*, transformational access to data and information, *collaboration tools*, and state-of-the-art *information management* capabilities when combined with new *operational processes* can provide, for a distributed staff, the same [or enhanced] situational awareness and speed of decision-making as a co-located staff.

Integrating Operational and Technical

INTEGRATION
Process Re-Engineering

The Fleet

C2F

JFMCC Split Staff
Distributed C2
Information Flow
Situational Awareness
Decision-Making

Integrators

NWDC, NNWC, SPAWAR

Information Management
Collaboration Toolsets
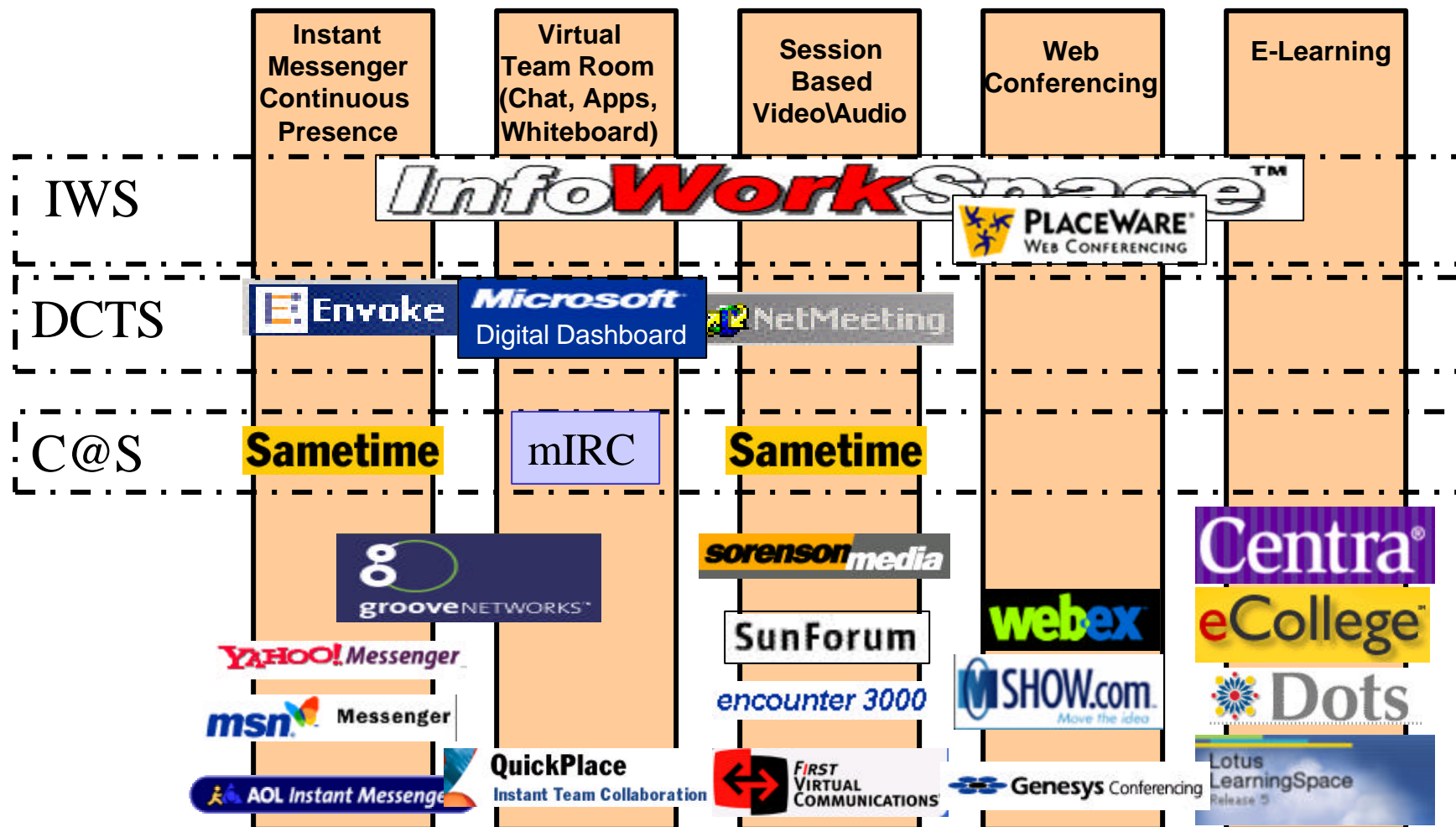Smart Agents
Network Connectivity
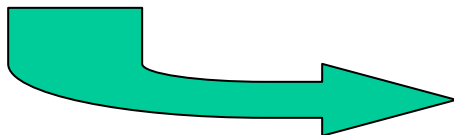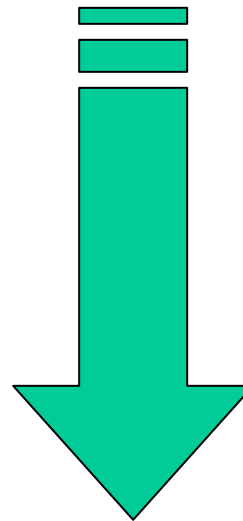
C2F LOE
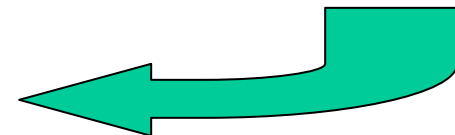
Spiral 1 Events

- **Working Group Sessions with C2F**

- **Table Top War Game**

- **Training/Rehearsal**

- **JTFEX 03-2**

External Dilemma

- Many Products, few interoperable

- Industry has not declared a winner

	Instant Messenger Continuous Presence	Virtual Team Room (Chat, Apps, Whiteboard)	Session Based Video\Audio	Web Conferencing	E-Learning
IWS	InfoWorkSpace™			PLACEWARE WEB CONFERENCING	
DCTS	Envoke	Microsoft Digital Dashboard	NetMeeting		
C@S	Sametime	mIRC	Sametime		

groove NETWORKS

YAHOO! Messenger

msn Messenger

AOL Instant Messenger

QuickPlace
Instant Team Collaboration

sorenson media

SunForum

encounter 3000

FIRST VIRTUAL COMMUNICATIONS

webex

SHOW.com
Move the idea

Genesys Conferencing

Centra®

eCollege™

Dots

Lotus LearningSpace
Release 5

Spiral One Applications

NIDTS

DCTS/CUSEEME

- **Click-to-Meet Express**

  Chat

  App Sharing

  Voice/Video

- **ENVOKE**

  IM

  Global Awareness

WISE Portal

Lotus Domino Website

Outlook Email/Folders

CISCO IP Phones

Legacy VTC

SIPRNET

LOTUS DOMINO

- **Sametime 2.5**

  Chat/IM

  App Sharing

  Voice/Video

TFWEB –Cleverpath Portal

Lotus Domino Website

Outlook Email/Folders

CISCO IP Phones

Legacy VTC

Infrastructure
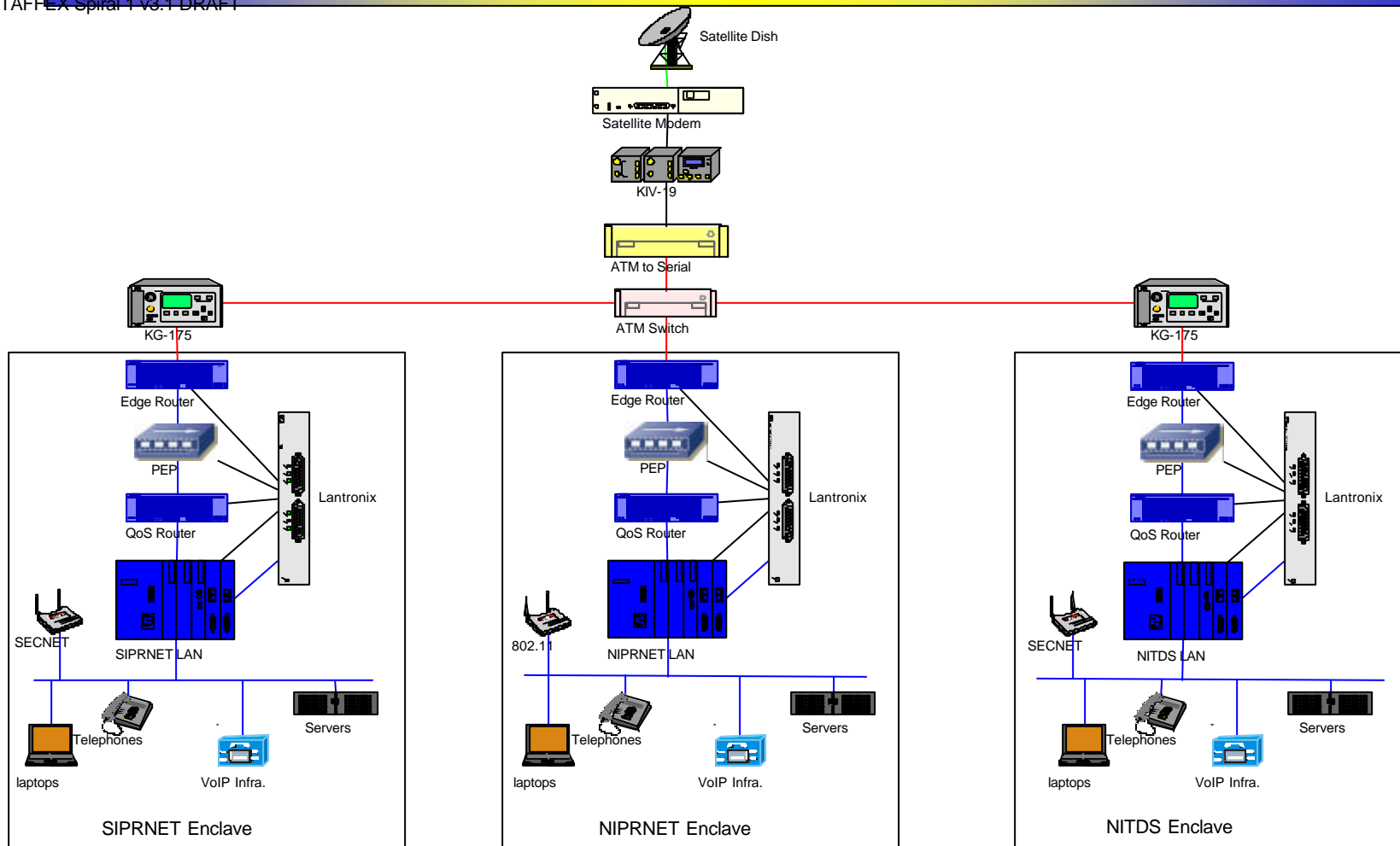
SPIRAL ONE Highlights

- **Split Staff Functionality**
- **Collaboration Information Environment Implementation**
- **Multi-Network Complexities**
- **Communication Network Architecture**
- **IM Planning**

Summary

- **FBE-K ESG Support to C7F & ESG LOE/FORCEnet IPD**

  - **Fold into FORCEnet Continuum lessons learned (technology and process)**

- **Working towards dynamic multi-path, survivable, and adaptable system that can be located afloat or ashore in a distributed C2 environment.**

Questions ?

Back-up Slides

Navy Transformation Roadmap Concepts

Sea Shield

- *Assure access throughout the battlespace for the Joint Force*
- *Project defense around friends, allies, and coalition and the Joint Forces*
- *Provide a sea-based layer of homeland defense*

Sea Strike

- *Project decisive and persistent offensive power anywhere in the world*
- *Launch immediate, agile and sustainable operations from the sea*

Sea Basing

- *Project forces worldwide with capability to fight & win*
- *Operate immediately from an expanded and secure maneuver area – the sea*
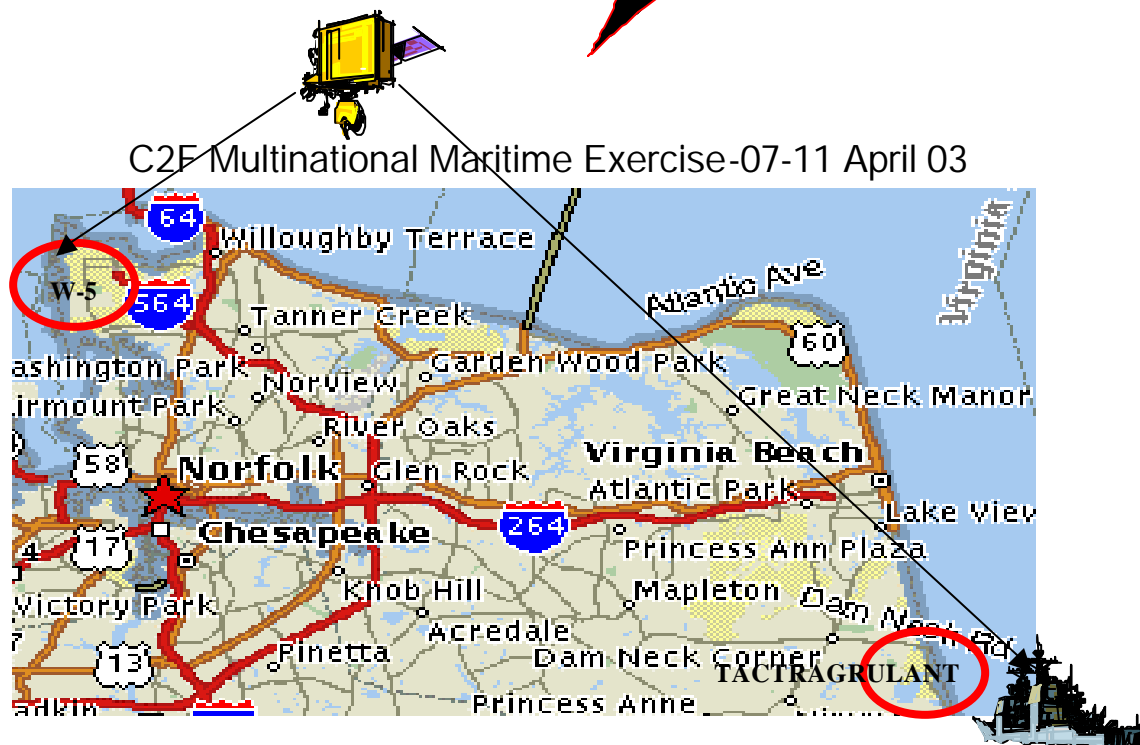- *Minimize vulnerabilities tied to overseas land support*

FORCEnet

Implement Network Centric Warfare.
Best Information to the right people at the right time

SEA TRIAL FORCEnet CONTINUUM

Spiral One...an integrated information sharing approach

C2F Multinational Maritime Exercise-07-11 April 03

W-5

TACTRAGRULANT

Simulated FLAG SHIP

- **Advance Network and Collaboration Tools to enable seamless Split Staff ops**

- **Enhance the collaboration information environment for Network Centric Operations**

- **Identify applicability of /opportunity for software agents to improve staff awareness**

The first step in a rapid spiral development approach to distributed C2 .

High Level Concept

Information and Knowledge Advantage

The gaining and sustaining of the *Information and Knowledge Advantage* enables our warfighters to make better and faster decisions, focus actions more effectively, and act faster than an adversary can react, dominating the tempo of operations and degrading the adversary's decision process and capability to fight effectively.

Spiral One Objectives

- **Collaboration Information Environment (CIE)**
  - **Baseline the CIE Toolset**

- **Information Management (IM)**
  - **Baseline Infrastructure Environment**

- **Smart Agents**
  - **Introduce agent functionality and learn where agents will be useful**

- **Network Technology**
  - **Employ dynamic bandwidth management**

Spiral One Goals

- **Evaluate CIE Toolset Baseline**
- **Understand and document intra staff functions and processes in a split environment**
- **Identify "agent input areas" for follow-on applications and agent use**
- **Demonstrate Wireless Network Capability**
- **Observe, document and understand IM in order to analyze and improve distributive C2**

SPIRAL ONE OBSERVATIONS

- **Knowledge Management Structure**
- **Bandwidth Management**
- **Technology Reliability a must**
- **Cultural Change –J2/IO**
- **Dynamic Battle Rhythm COP positive**
- **Standards applied to CIE**
- **Spiral II Way Ahead**
- **Included in Quicklook**

JFMCC Battle Rhythm

- Targeting Nomination MTG — 2200
- ASSESSREP to JFC — 2030
- Maritime Commanders Direction and Guidance to Subordinates — 1930
- Maritime Execution and Planning Update VTC — 1800
- N2 Turnover — 1730
- Plans Brief/War Council — 1700
- JFC/CC VTC — 1600
- Watch Turnover — 1530
- CMD Coord MTG — 1400
- LL Meeting — 1300
- ROE Board — 1200
- Staff Coord MTG — 1100
- INFO OPS Coord Board — 1000
- Joint Maritime Planning Group — 0830
- Targeting Update — 0800
- Watch Turnover/ CDRs update — 0730
- N2 Turnover — 0530